

Attorney Docket No. ANO6129P1US  
Serial No. 10/007,861

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LISTING OF THE CLAIMS

1. **(Currently Amended)** A process for the production of an aqueous sol containing silica-based particles which comprises the sequential steps of:

- (a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;
- (b) alkalisng in a first alkalisng step the acid sol, while keeping at an SiO<sub>2</sub> content within the range of from 4.5 to 8% by weight, to form an alkalisng sol having a pH of at least 7;
- (c) allowing particle growth of the alkalisng sol for at least 10 minutes; and
- (d) alkalisng in a second alkalisng step the obtained sol to a pH of at least 10.0 by adding alkali selected from the group consisting of lithium hydroxide, sodium hydroxide or potassium hydroxide; an aqueous silicate solution, or a mixture thereof.

2 – 25. Cancelled.

26. **(Previously Presented)** The process according to claim 1, wherein the process further comprises:

- (e) concentrating the alkalisng sol obtained according to (b).

27. **(Previously Presented)** The process according to claim 1, wherein the process further comprises:

- (e) concentrating the alkalisng sol subjected to particle growth obtained according to (c).

28. **(Previously Presented)** The process according to claim 1, wherein the process further comprises:

- (e) concentrating the alkalisng sol obtained according to (d).

29. **(Previously Presented)** The process according to claim 1, wherein the aqueous sol obtained in the process has a specific surface area of at least 90 m<sup>2</sup>/g aqueous sol.

30. **(Previously Presented)** The process according to claim 26, wherein the aqueous sol obtained in the process has a specific surface area of at least 95 m<sup>2</sup>/g aqueous sol.

31. **(Previously Presented)** The process according to claim 1, wherein the alkalisation according to (b) and (d) is carried out by means of an aqueous silicate solution.

32. **(Previously Presented)** The process according to claim 1, wherein the particle growth according to (c) is carried out at a temperature within the range of from 35 to 95°C.

33. **(Previously Presented)** The process according to claim 1, wherein the alkalisation according to (d) produces a sol having a molar ratio of SiO<sub>2</sub> to M<sub>2</sub>O, where M is alkali metal or ammonium, within the range of from 15:1 to 30:1 and a pH of at least 10.6.

34. **(Previously Presented)** The process according to claim 1, wherein the process further comprises addition of an aluminium-containing compound, a boron-containing compound or a mixture thereof.

35. **(Previously Presented)** The process according to claim 1, wherein the silica-based particles obtained in the process have a specific surface area of at least 550 m<sup>2</sup>/g SiO<sub>2</sub>.

36. **(Withdrawn)** An aqueous sol containing silica-based particles obtained by a process which comprises:

- (a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;
- (b) alkalisng the acid sol at an  $\text{SiO}_2$  content within the range of from 4.5 to 8% by weight to form an alkalisng sol having a pH of at least 7;
- (c) allowing particle growth of the alkalisng sol for at least 10 minutes; and
- (d) alkalisng the obtained sol to a pH of at least 10.0.

37. **(Withdrawn)** The aqueous sol according to claim 36, wherein the process further comprises:

- (e) concentrating the sol obtained according to (c).

38. **(Withdrawn)** The aqueous sol according to claim 36, wherein the process further comprises:

- (e) concentrating the sol obtained according to (d).

39. **(Withdrawn)** The aqueous sol according to claim 37, wherein it has a specific surface area of at least  $95 \text{ m}^2/\text{g}$  aqueous sol.

40. **(Withdrawn)** The aqueous sol according to claim 36, wherein the aqueous sol has a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 15:1 to 30:1 and a pH of at least 10.6.

41. **(Withdrawn)** The aqueous sol according to claim 36, wherein the sol comprises an aluminum-containing compound, a boron-containing compound or a mixture thereof.

42. **(Withdrawn)** The aqueous sol according to claim 36, wherein the silica-based particles have a specific surface area of at least  $550 \text{ m}^2/\text{g}$   $\text{SiO}_2$ .

43. **(Currently Amended)** A process for the production of an aqueous sol containing silica-based particles which comprises the sequential steps of:

- (a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;
- (b) alkalisng in a first alkalisng step the acid sol, while keeping at an SiO<sub>2</sub> content within the range of from 4.5 to 8% by weight, to form an alkalisng sol;
- (c) heat-treating the alkalisng sol at a temperature of at least 30°C; and
- (d) alkalisng in a second alkalisng step the heat-treated sol to a pH of at least 10.0 by adding alkali selected from the group consisting of lithium hydroxide, sodium hydroxide, or potassium hydroxide; an aqueous silicate solution, or a mixture thereof.

44. (Previously Presented) The process according to claim 43, wherein the process further comprises:

- (e) concentrating the alkalisng sol obtained according to step (b).

45. (Previously Presented) The process according to claim 43, wherein the process further comprises:

- (e) concentrating the alkalisng sol obtained according to step (c).

46. (Previously Presented) The process according to claim 43, wherein the process further comprises:

- (e) concentrating the alkalisng sol obtained according to step (d).

47. (Previously Presented) The process according to claim 43, wherein the aqueous sol obtained in the process has a specific surface area of at least 90 m<sup>2</sup>/g aqueous sol.

48. (Previously Presented) The process according to claim 43, wherein the aqueous sol obtained in the process has a specific surface area of at least 95 m<sup>2</sup>/g aqueous sol.

49. **(Previously Presented)** The process according to claim 43, wherein the alkalisation according to (b) and (d) is carried out by means of an aqueous silicate solution.

50. **(Previously Presented)** The process according to claim 43, wherein the heat-treatment according to (c) is carried out for 20 to 240 minutes.

51. **(Previously Presented)** The process according to claim 43, wherein the alkalisation according to (d) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 15:1 to 30:1 and a pH of at least 10.6.

52. **(Previously Presented)** The process according to claim 43, wherein the process further comprises addition of an aluminum-containing compound, a boron-containing compound or a mixture thereof.

53. **(Previously Presented)** The process according to claim 43, wherein the silica-based particles obtained in the process have a specific surface area of at least  $550 \text{ m}^2/\text{g SiO}_2$ .

54. **(Withdrawn)** An aqueous sol containing silica-based particles obtained by a process comprising:

- (a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;
- (b) alkalisng the acid sol at an  $\text{SiO}_2$  content within the range of from 4.5 to 8% by weight to form an alkalisng sol;
- (c) heat-treating the alkalisng sol at a temperature of at least  $30^\circ\text{C}$ ; and
- (d) alkalisng the heat-treated sol to a pH of at least 10.0.

55. **(Withdrawn)** The aqueous sol according to claim 54, wherein the process further comprises:

- (e) concentrating the sol obtained according to (c).

56. **(Withdrawn)** The aqueous sol according to claim 54, wherein the process further comprises:

(e) concentrating the sol obtained according to (d).

57. **(Withdrawn)** The aqueous sol according to claim 54, wherein it has a specific surface area of at least 95 m<sup>2</sup>/g aqueous sol.

58. **(Withdrawn)** The aqueous sol according to claim 54, wherein it has a molar ratio of SiO<sub>2</sub> to M<sub>2</sub>O, where M is alkali metal or ammonium, within the range of from 15:1 to 30:1 and a pH of at least 10.6.

59. **(Withdrawn)** The aqueous sol according to claim 54, wherein it comprises an aluminum-containing compound, a boron-containing compound or a mixture thereof.

60. **(Withdrawn)** The aqueous sol according to claim 54, wherein the silica-based particles have a specific surface area of at least 550 m<sup>2</sup>/g SiO<sub>2</sub>.

61. **(Currently Amended)** A process for the production of an aqueous sol containing silica-based particles which comprises:

(a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;

(b) alkalis in a first alkalisation step the acid sol, while keeping at an SiO<sub>2</sub> content within the range of from 4.5 to 8% by weight, to form an alkalis sol;

(c) heat-treating the alkalis sol obtained according to (b) at a temperature within the range of from 35 to 95°C for 20 to 240 minutes;

(d) alkalis in a second alkalization step the heat-treated sol obtained according to (c) to a pH of at least 10.0 and a molar ratio of SiO<sub>2</sub> to M<sub>2</sub>O, where M is alkali metal or ammonium, within the range of from 15:1 to 30:1 by adding alkali, an aqueous silicate solution, or a mixture thereof;

(e) concentrating the sol obtained according to (c) or (d); and

(f) providing an aqueous sol which has a specific surface area of at least 95 m<sup>2</sup>/g aqueous sol and contains silica-based particles which have a specific surface area of at least 550 m<sup>2</sup>/g SiO<sub>2</sub>.

**62. (Previously Presented)** The process according to claim 61, wherein the alkalisation according to step (b) and step (d) is carried out by means of an aqueous silicate solution.

**63. (Previously Presented)** The process according to claim 61, wherein the alkalisation according to (d) produces a pH of at least 10.6.

**64. (Withdrawn)** An aqueous sol containing silica-based particles obtained by a process which comprises:

- (a) acidifying an aqueous silicate solution to a pH of from 1 to 4 to form an acid sol;
- (b) alkalisising the acid sol at an SiO<sub>2</sub> content within the range of from 4.5 to 8% by weight to form an alkalisised sol;
- (c) heat-treating the alkalisised sol at a temperature within the range of from 35 to 95°C for 20 to 240 minutes;
- (d) alkalisising the heat-treated sol to a pH of at least 10.0 and a molar ratio of SiO<sub>2</sub> to M<sub>2</sub>O, where M is alkali metal or ammonium, within the range of from 15:1 to 30:1;
- (e) concentrating the sol obtained according to step (c) or step (d); and
- (f) providing an aqueous sol which has a specific surface area of at least 95 m<sup>2</sup>/g aqueous sol and contains silica-based particles which have a specific surface area of at least 550 m<sup>2</sup>/g SiO<sub>2</sub>.

**65. (Withdrawn)** The aqueous sol according to claim 64, wherein it has a pH of at least 10.6.

**66 - 72. (Cancelled)**

73. **(New)** The process according to claim 1, wherein said  $\text{SiO}_2$  content is kept within the range of from 5.0 to 7.5% by weight in step (b).
74. **(New)** The process according to claim 73, wherein the alkalization according to (d) produces a sol having an S-value within the range of 20 to 40%.
75. **(New)** The process according to claim 1, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 20:1 to 80:1.
76. **(New)** The process according to claim 75, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 30:1 to 70:1.
77. **(New)** The process according to claim 76, wherein the alkalization according to (d) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 12:1 to 40:1.
78. **(New)** The process according to claim 77, wherein the alkalization according to (d) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 15:1 to 30:1.
79. **(New)** The process according to claim 78, wherein the alkalization according to (d) produces a sol having an S-value within the range of 10 to 45%.
80. **(New)** The process according to claim 43, wherein said  $\text{SiO}_2$  content is kept within the range of from 5.0 to 7.5% by weight in step (b).
81. **(New)** The process according to claim 80, wherein the alkalization according to (d) produces a sol having an S-value within the range of 20 to 40%.



82. (New) The process according to claim 43, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 20:1 to 80:1.

83. (New) The process according to claim 82, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 30:1 to 70:1.

84. (New) The process according to claim 83, wherein the alkalization according to (d) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 12:1 to 40:1.

85. (New) The process according to claim 84, wherein the alkalization according to (d) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 15:1 to 30:1.

86. (New) The process according to claim 85, wherein the alkalization according to (d) produces a sol having an S-value within the range of 10 to 45%.

87. (New) The process according to claim 61, wherein said  $\text{SiO}_2$  content is kept within the range of from 5.0 to 7.5% by weight in step (b).

88. (New) The process according to claim 87, wherein the alkalization according to (d) produces a sol having an S-value within the range of 20 to 40%.

89. (New) The process according to claim 61, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 20:1 to 80:1.

90. (New) The process according to claim 89, wherein the alkalization according to (b) produces a sol having a molar ratio of  $\text{SiO}_2$  to  $\text{M}_2\text{O}$ , where M is alkali metal or ammonium, within the range of from 30:1 to 70:1.

Attorney Docket No. ANO8129P1US  
Serial No. 10/007,861

91. **(New)** The process according to claim 90, wherein the alkalization according to (d) produces a sol having an S-value within the range of 10 to 45%.